

ABSTRACT

5 A process for controlling the mycelial morphology of  
a microorganism belonging to the genus Mortierella during  
culturing and a process for producing unsaturated fatty  
acids and a lipid containing them by using a culture  
medium for culturing a microorganism in which phosphate  
ions, potassium ions, sodium ions, magnesium ions, and  
calcium ions in the culture medium are in the range of 5  
10 to 60 mM, 5 to 60 mM, 2 to 50 mM, 0.5 to 9 mM, and 0.5 to  
12 mM, respectively, characterized in that the  
microorganism belonging to the genus Mortierella is  
cultured in a culture medium containing phosphate ions in  
the range of 5 to 60 mM, potassium ions in the range of 5  
15 to 60 mM, sodium ions in the range of 2 to 50 mM,  
magnesium ions in the range of 0.5 to 9 mM, and calcium  
ions in the range of 0.5 to 12 mM, respectively, to  
produce unsaturated fatty acids and the lipid containing  
them, and the culture medium for culturing a  
20 microorganism having phosphate ions, potassium ions,  
sodium ions, magnesium ions, and calcium ions in the  
range of 5 to 60 mM, 5 to 60 mM, 2 to 50 mM, 0.5 to 9 mM,  
and 0.5 to 12 mM, respectively.